A-REIT Seasoned Equity Offerings: Determinants and Market Reaction

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Keywords

A-REITs, seasoned equity offerings, market reaction, panel data, event study

Abstract

The paper examines the decision by Australian Real Estate Trusts (A-REITs) to issue seasoned equity offerings from 2000 - 2008 and stock market reaction to the offerings using panel data and event study methodologies, respectively. The global financial crisis has resulted in freezing of the Australian bond markets, with several A-REITs left with seasoned equity issuance and asset sales as the only viable modes of raising additional capital. The findings review that leverage and operating risk are negative significant determinants of seasoned equity offerings; profitability and growth opportunities are positive significant determinants. Of the structure and type of properties held by the A-REIT, only stapled management structure and international operations are significant determinants. Type of properties held by A-REITs show inconsistent results. Similar to previous studies of seasoned equity offerings, we find a significant negative abnormal return associated with their announcement and no evidence of excessive leakage of information. Cross-sectional regressions show that the issued amount raised and leverage are significant factors affecting abnormal returns.

Introduction

Many A-REITs used equity capital to fuel growth and expansion during the mid-1990's, but later switched to debt financing in 1997 when the Reserve Bank of Australia cut interest rates in the second half of 1996, which made debt financing a cheaper option to equity capital (Kavanagh 1997). Chikolwa (2009) shows the dominance by A-REITs of using public debt to funding operations and expansion through commercial mortgage-backed securities and unsecured bonds over equity raisings for the period 2000 - 2008. With the shutting down of the Australian public debt markets in Q3:2007, A-REIT equity raisings came back in vogue with a total of AU$14.4 billion raised in 2007 - 2008. PIR (2008) state that a total AU$50.9 billion was raised through equity raisings between 2000 – 2008. The current issuances counter established theory that firms time their equity issue to coincide with high equity prices (Baker et al. 2003), SEO firms exhibit strong abnormal performance during the period preceding issue (Schultz 2003, 2004) and that shareholders and management will attempt to take advantage of 'window of opportunity' in choosing when to issue equity (Loughran & Ritter 1995; Ritter 1991)[1].

Newell (2008) showed the prominence of the A-REIT market second to the US and two A-REITs (Westfield and Stockland) being part of the top 10 largest REITs as at December 2007 and yet no study has empirically investigated A-REIT equity raisings. Prior non-Australian REIT research documents that investors react negatively, on average, to announcements of seasoned equity offerings (SEO) (Brounen & Eichholtz 2002; Ghosh et al. 1999; Marciukaityte et al. 2007), although competing explanations

[1] Quarterly total returns of the S&P/ASX A-REIT 300 and the ASX All Ordinaries indices fell by -33.2% and by 20.2%, respectively, to December 2008. With the Australia public debt market closed, asset sales and SEOs were the main capital raising options available for A-REITs.

remain for these empirical results and little evidence exits of the determinants of REIT's choice to issue SEOs.

As such, the purpose of this paper is to analyse two areas of A-REIT SEOs, namely, determinants of the decision by an A-REIT to issue SEO and market reaction to SEOs. Apart from data being based on Australia, the study differs from previous international studies as it includes other firm-specific attributes such as property sector, stapled management structure[2] and international operations in addition to the traditional determinants of capital structure such as asset size, profitability ratios, tangibility of assets, growth opportunities, and operating risk. The analysis is conducted using data pertaining to 34 A-REITs in the S&P/ASX 300 for the period 2000 - 2008.

Our results show that that leverage, growth opportunities and operating risk are the main determinants of the decision by A-REITs to issue SEO. Of the property-specific factors, only stapled management structure and international operations are significant determinants, with property sector showing inconsistent results. Similar to previous REIT studies of SEO, we find a significant negative abnormal return associated with their announcement and no evidence of excessive leakage of information.

The paper is structured as follows. Section 2 reviews literature on SEO. Section 3 discusses the data and methodology. The study results and their analyses are shown in Section 4. Concluding remarks and future research directions are shown in Section 5.

[2] Stapled management structure involves funds management and property development, in addition to the traditional passive property holding for investment.

Literature Review

Several competing explanations have been postulated on why investors react negatively, on average, to SEO announcements.

The essential argument of the *price pressure hypothesis* is that the negative market reaction to equity issues occurs because there are no very close substitutes for the equity of the issuing company, and so the price has to fall sharply for the market to absorb the increased quantity supplied (Scholes 1972). However, Loderer et. al (1991) found no evidence to suggest that the negative abnormal returns were due to the determinants of price elasticity.

Under the *information asymmetry effect hypothesis*, negative stock price reactions to the announcements and attributes this phenomenon to the information asymmetry between corporate managers and outside investors (Myers & Majluf 1984). Corporate managers have superior information about investment projects, with outside investors believing that managers act in the interest of existing shareholders and therefore prefer to issue equity when they perceive that it is overvalued. Korajczyk et al. (1991) argue that the information asymmetry between insiders and outsiders is not fixed over time and firms will prefer to issue equity when the market is most informed.

Miller and Rock's (1985) *investment opportunity hypothesis* theorises that firms are faced with constant investment requirements and thus security issues signal a projected shortfall in the earnings of the issuing company. Chang and Chen (2007) find that announcing firms with favourable investment opportunities have a positive response to the announcements of their secured debt offerings, in contrast to Eckbo (1986) who found that share prices did not change significantly when debt issues were announced to the market.

Barclay and Litzenberger's (1988) *wasteful investment hypothesis* postulates that market reaction to all disclosures of new security issues will be positively related to indications of corporate growth prospects. This builds on earlier insights by Jensen's (1986) analysis that the market reaction to new financing announcements will reflect investors' awareness that managers have an incentive to overinvest newly raised funds by spending the cash on projects with negative net present values (NPVs) as long as their rewards are closely linked to the size of the firm rather than to shareholders' wealth. The theory therefore predicts that the market reaction to equity issues will be adverse as long as investors are sceptical of managers' motives.

Under the *wealth effects hypothesis*, unexpected issue of new equity reduces the risk of the firms' outstanding debt and consequently results in a wealth transfer from shareholders to bondholders. Therefore, the firm's debt-to-equity ratio decrease results in negative abnormal returns (Masulis 1983). However, Elliot et al (2009) find that bondholders experience a significant positive return on the announcement of an SEO and this effect is more pronounced for bonds with lower ratings.

Previous attempts to identify the factors which explain any cross-sectional variation in the market reaction to seasoned equity offers (SEOs) have provided relatively mixed results. For example, several studies have examined the relationship between the size of an equity issue and the market reaction to the announcement; they find that the association is either (i) negative and insignificant (Aggarwal & Zhao 2008; Lin et al. 2008), (ii) negative and significant (Ghosh et al. 1999; Masulis & Korwar 1986), or (iii) positive and insignificant (Sant & Ferris 1994), Other variables which have been examined as potential determinants of the market reaction to SEOs include (a) pre-issue information (Lin et al. 2008), (b) debt levels (Walker & Yost 2008), (c) issue purposes (Autore et al. 2009), (d) growth opportunities (Burton et al. 2000; Chou et al. 2009), (e)

institutional holding (Ghosh et al. 1999), (f) operating performance of issuer (Andrikopoulos 2009); investigations into the role played by each of these factors also show mixed results.

Lin et al (2008) find none of the pre-issue disclosures by managers to reduce the costs of SEOs are capable of reducing the price drop at issue announcement and that both price and trading volume reactions are not related to the intervals between the disclosures and the issue announcements.

Autore et al. (2009) find that issuers stating recapitalization or general corporate purposes experience abnormally poor performance in the subsequent three years, but issuers stating investment display little or no subsequent underperformance. Recapitalisation includes issuing equity to pay down debt obligations. If debt is excessive, recapitalizing by issuing equity to pay down debt might reduce shareholder value. To avoid this, management could recapitalize debt by issuing stock when investors are overly optimistic about the firm's future prospects, potentially resulting in relative devaluation over the long-run. For example, Hertzel and Li (2007) find that issuing firms that are overvalued tend to reduce debt after the issue. A different insight is offered by Walker and Yost (2008), who find that firms with a stated intention of paying down debt actually have leverage ratios three years after the SEO that are similar to leverage ratios prior to the SEO. Thus, firms issuing equity to refinance may be opportunistic market timers and, therefore, we expect these firms to experience poor long-run performance.

Autore et al. (2009) and Hertzel and Li (2007), find that issuers with higher growth options invest more after the SEO and do not experience poor post-issue stock returns,

but issuers with greater overvaluation decrease long-term debt and increase cash after the issue and suffer poor long-run stock performance. This finding differs, however, from the result of Walker and Yost (2008) that issuers intending to decrease debt have subsequent improvements in industry-adjusted operating performance. Another contrary view of the negative relation between the level of growth opportunities and post-offering long-term stock performance for firms issuing equity privately is offered by Chou et al. (2009) who attribute this to three explanations: *real investment hypothesis* (Li et al. 2009), *skewness preference* (Barberis & Huang 2008), and *conditional over-optimism*.

Ghosh et al. (1999) found the structure and type of properties held by the REIT to be insignificant, with no allowable inference to be drawn.

Andrikopoulos (2009) state that the long-term underperformance is significantly related to a deterioration of companies' operating fundamentals in the post-offering period. Allen and Soucik (2008) report underperformance of Australian firms issuing seasoned equity during the first 5 years following the offer and significant overinvestment in the sixth year. They attribute the underperformance to the initial underpricing, as reflected in the dilution yield measure of initial returns.

Data and Methodology

Data and Sample Selection

This study examines the event of SEOs of the 34 A-REITs in the S&P/ASX 300 index during 2000 – 2008. The financial data and trading data for A-REITs were collected from Aspect Fin Analysis and Connect 4 databases, respectively. There were 93 SEOs above AU$10 million totalling of AU$ 25.4 billion during this period.

Descriptive Statistics

Descriptive statistics regarding the sample are provided in Table 1.

Table 1: Descriptive Statistics

Variable	Mean	Maximum	Minimum	Std. Dev.	No. of Observations
ERD	7.913	9.277	4.768	0.721	93
LTA	0.417	1.003	0.000	0.185	229
ROA	0.026	0.220	-7.652	0.511	229
TOQ	1.001	2.028	0.000	0.353	229
PPT	0.556	0.999	0.000	0.372	229
SDE	0.124	2.590	0.000	0.471	229
SIZ	8.933	10.706	0.000	1.590	229
SRE	0.197	1.000	0.000	0.398	229
SOF	0.135	1.000	0.000	0.343	229
SDD	0.074	1.000	0.000	0.263	229
SOT	0.279	1.000	0.000	0.450	229
SSS	0.541	1.000	0.000	0.499	229
INT	0.616	1.000	0.000	0.487	229

Notes: The summary statistics are based on the final sample of 229 firm-year observations. Natural log of AU$ million of seasoned equity raised (ERD). The regressors are leverage: the ratio of total liability to total assets (LTA); profitability: return on assets (ROA); growth opportunities: Tobin's Q (TOQ); tangibility: ratio of book value of property to total assets (PPT); operating risk: standard deviation of EBIT scaled by total assets for each firm over the entire period covered (SDE); size: natural logarithm of total assets (SIZ); and property sector dummy variables of 1 or 0 otherwise: retail (SRE), office (SOF), industrial (SDD); others (SOT); stapled structure management dummy varaible of 1 or 0 otherwise (SSS); and international operations dummy variable of 1 or 0 otherwise (INT).

Table 2 shows that most of the variables in the dataset are not highly correlated.

Table 2: Correlation Coefficients

	LTA	ROA	TOQ	PPT	SDE	SIZ	SRE	SOF	SDD	SOT	SSS
ROA	-0.113										
TOQ	0.244	-0.101									
PPT	-0.328	0.104	-0.124								
SDE	0.112	-0.355	0.355	-0.194							
SIZ	0.311	0.141	0.351	0.297	-0.118						
SRE	-0.050	0.032	-0.204	0.164	-0.096	0.017					
SOF	-0.164	0.027	-0.013	0.297	-0.086	0.085	-0.196				
SDD	-0.071	0.018	-0.084	0.147	-0.060	0.084	-0.140	-0.112			
SOT	0.337	0.046	0.128	-0.410	-0.111	-0.139	-0.308	-0.246	-0.176		
SSS	0.084	-0.059	0.148	-0.305	0.175	0.020	-0.185	-0.225	-0.141	-0.052	
INT	-0.010	0.081	-0.179	0.034	-0.229	0.126	0.187	0.076	0.224	-0.348	0.084

Notes: The summary statistics are based on the final sample of 229 firm-year observations. The dependent variables for the models are binary taking the value of 1 if an A-REIT raised seasoned equity, 0 othersiwise. The regressors are leverage: the ratio of total liability to total assets (LTA); profitability: return on assets (ROA); growth opportunities: Tobin's Q (TOQ); tangibility: ratio of book value of property to total assets (PPT); operating risk: standard deviation of EBIT scaled by total assets for each firm over the entire period covered (SDE); size: natural logarithm of total assets (SIZ); and property sector dummy variables of 1 or 0 otherwise: retail (SRE), office (SOF), industrial (SDD); others (SOT); stapled structure management dummy varaible of 1 or 0 otherwise (SSS); and international operations dummy variable of 1 or 0 otherwise (INT).

Measurement and Interpretation of Variables

Following previous studies that have used leverage (Walker & Yost 2008), profitability (Andrikopoulos 2009), tangibility (Lyandres et al. 2008), size (Guo & Mech 2000), growth opportunities (Chou et al. 2009) and operating risk (Guo & Mech 2000) as determinants of SEOs, additional variables of property sector, stapled management structure, and international operations are included in this study to fully capture the structure and type of properties held by the A-REIT similar to Ghosh et al. (1999).

Guo and Mech (2000) document evidence that larger firm, the higher the probability of SEOs. They also suggest that security risk is a more direct measure of valuation of uncertainty, which implies that firms with higher risk are less likely to issue equity. In addition, they show that firms with more cash on hand and expected internal cash flow

are less likely to issue equity. Burton et al. (2000) and Chou et al. (2009) report the effect of equity issue announcements is influenced by the value of the growth opportunities of the issuing firm. Lyandres at al. (2008) employ the ratio of investment in real assets to total assets as a measure of investment. We proxy size by the natural logarithm of total assets (SIZ) and use return on assets (ROA) to measure profitability. We use an approximation of Tobin's q (TOQ) to proxy for growth opportunities. The Tobin's q ratio is defined as the ratio of the market value of equity plus the book value of debt to the book value of assets. The proxy for tangibility is the ratio of the book value of property to total assets (PPT). Standard deviation of earnings before income tax (EBIT) scaled by total assets (SDE) for each firm over the entire period covered is used as a proxy for operating risk.

Probit Model

Accordingly, the probit model we employ to estimate the probability of a SEO is as follows:

$$Prob\,(SEO_{it} = 1) = \alpha_0 + \alpha LTA_i + \alpha ROA_i + \alpha TOQ_i + \alpha PPT_i + \alpha SDEi + \alpha SIZi + \alpha DUMp_{,i} + \alpha DUMs_{,i} + \alpha DUM_{I,i} + \zeta_i \quad (1)$$

where: SEO = dummy variable that equals 1 if an A-REIT *i* issued a SEO in year *t*, and 0;

LTA = ratio of total liability to total assets;

ROA = return on assets;

TOQ = ratio of the market value of equity plus the book value of debt to the book value of assets;

PPT = ratio of the book value of property to total assets;

SDE = standard deviation of earnings before income tax (EBIT) scaled by total assets;

SIZ = natural logarithm of total assets;

DUM_P = dummy variable for property sector;

DUM_S = dummy variable for stapled management structure; and

DUM_I = dummy variable for international operations.

Event Study Methodology

To analyse the price effect of the SEOs, the standard market model approach was employed as outline in Brown & Warner (1985). Specifically, each sample observation was regressed against a market index using an ordinary least square as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \qquad (2)$$

where: R_{it} = continuous return on the shares of firm *i* during period *t*;

R_{mt} = continuous return on the market index during period *t*;

αi = intercept for firm *i*; and

βi = slope coefficient (market beta) for firm *i*.

An estimation window of (-115, -16) was used for the above regression. The window was deemed appropriate considering that prior studies tended to use a similar size estimation window, and that 100 trading days strike a balance between accurately gauging a company's relationship to the market and incorporating too many firm specific trends that could bias the regression.

The alpha and beta of the market model were used to calculate the predicted returns of each observation over a range of event window, [-15,+15]. The Abnormal Return (AR) for each event day was then calculated as the difference between the observed return and predicted return.

Next, the standardized abnormal return (Seiler 2004) was aggregated across the sample, giving the total standardized abnormal return (*TSAR*) for each event day.

$$SAR_{jt} = \frac{AR_{jt}}{\sqrt{S^2 AR_{jt}}} \text{ and } TSAR_t = \sum_{j=1}^{N} SAR_{jt} \qquad (3)$$

where: SAR_{jt} = standardized abnormal return for firm *j* in day *t* of the event window;

AR_{jt} = abnormal return for firm *j* in day *t* of the event window;

$S^2_{AR_{jt}}$ = variance for firm *j* in day *t* of the event window;

$TSAR_{jt}$ = total standardized abnormal return for the sample on day *t* of the event window; and

j = 1 & *N* are the first and last firm, respectively in the sample.

Additionally, to analyse the price effect over the event period, the total cumulative standardized abnormal return *(TSCAR)* was calculated:

$$\boldsymbol{TSAR_N} = \sum_{t=t_1}^{t=t_2} TSAR_t \qquad (4)$$

where: $TSCAR_N$ = total standardized cumulative abnormal return over period

N;

t_1 and t_2 = first and last event days, respectively, of period N.

All hypotheses were accepted or rejected according to the *Z* statistic, calculated as:

$$Z(TSAR) = \frac{TSAR_{tt}}{\sqrt{\sum_{j=1}^{N} \frac{D_j - 2}{D_j - 4}}}$$

or

$$Z(TSCAR) = \left(\frac{1}{\sqrt{N}}\right)\left(\frac{\sum_{T_1}^{T_2} TSAR_t}{\sqrt{(T_2 - T_1 + 1)\left(\frac{D_j - 2}{D_j - 4}\right)}}\right) \quad (5)$$

where: $TSCAR_N$ = total standardized cumulative abnormal return over period *N*;

D_j = number of observed trading day returns for firm *j* over the ε estimation period;

T_1 = earliest date in the event window;

T_2 = later date in the even window; and

N = number of firm in the sample.

Ordinary Least Square Methodology

The model developed here aims at identifying factors of SEO announcement returns and was tested using an ordinary least square regression frame. The following multivariate regression equation was used:

$$CAR_{it} = \alpha_0 + \beta_1 ERD_i + \beta_2 LTA_i + \beta_3 ROA_i + \beta_4 TOQ_i + \beta_5 PPT_i + \beta_6 SDEi + \beta_7 SIZi + \beta_8 DUMp_{,i} + \beta_9 DUMs_{,i} + \beta_{10} DUM_{I,i} + \varepsilon_{it} \quad (6)$$

where: CAR_{it} = standardized cumulative abnormal return day -1 to day *t;*

ERD = natural logarithm of issued amount;

Results and Analysis

Determinants of SEO Issuance Choice

Two separate, single equation models were estimated by probit model. The results are given in Table 3. The models explain between 17% and 25 % of the within-sample variance in the dependent variables and the LR statistics show that the models are, overall, significant.

Table 3: Probit Regression Results of SEO Issuance Choice

Variable	Model 1			Model 2		
	Coeff.	z-Statistic	Prob.	Coeff.	z-Statistic	Prob.
C	-0.350	-0.700	0.484	-0.367	-0.623	0.533
LTA	-1.185	-1.719	0.086	-1.054	-1.620	0.105
ROA	4.107	1.334	0.182	5.863	1.822	0.069
TOQ	0.441	1.416	0.157	0.722	2.165	0.030
PPT	0.790	2.521	0.012	0.297	0.829	0.407
SDE	-9.491	-2.667	0.008	-14.464	-3.412	0.001
SIZ	-0.037	-0.494	0.621	-0.051	-0.649	0.516
SRE					1.929	0.054
SOF					1.166	0.243
SDD					-0.097	0.922
SOT					-0.917	0.359
SSS					-2.551	0.011
INT					1.978	0.048
McFadden R-squared		0.165			0.253	
LR statistic		50.024			76.638	
Prob(LR statistic)		0.000			0.000	

Notes: The dependent variables for the models are binary taking the value of 1 if an A-REIT raised seasoned equity, 0 othersiwise. The regressors are leverage: the ratio of total liability to total assets (LTA); profitability: return on assets (ROA); growth opportunities: Tobin's Q (TOQ); tangibility: ratio of book value of property to total assets (PPT); operating risk: standard deviation of EBIT scaled by total assets for each firm over the entire period covered (SDE); size: natural logarithm of total assets (SIZ); and property sector dummy variables of 1 or 0 otherwise: retail (SRE), office (SOF), industrial (SDD); others (SOT); stapled structure management dummy varaible of 1 or 0 otherwise (SSS); and international operations dummy variable of 1 or 0 otherwise (INT).

In order to maintain brevity and to capture the A-REIT setting, only results of model 2 are discussed. Leverage (LTA) and operating risk (SDE) show a negative significant relationship at 10% level and 5% level, respectively, to the decision to issue SEOs by A-REITs. This result supports that of Guo and Mech (2000) that highly leveraged firms with variable earnings are less likely to issue SEOs. Profitability (ROA) and growth opportunities (TOQ) are positive and significant at 5% level. The result for profitability is anomalous as profitable firms are less likely to issue SEOs. Tangibility and size are insignificant. Variables for structure and type of properties held by the A-REIT are

inconsistent and mainly insignificant; only the retail A-REIT, stapled management structure and international operations variables are significant at 5% level.

Event Study Results

TCAR and TSCAR for the entire sample during the event window are shown in Table 4. The TCAR at the event day experienced a significant negative daily return of -36.1%, with z statistics of -4.50 and achieving significant p value at 1% level. A further fall is observed on +1 day at -61.1%, which shows that the market fully reflects the effects of the announcement after a day. Other post-event days are statistically insignificant apart from day +6 which is statistically significant at 5%. No evidence of major pre-announcement leakage is observed as only days -12 and -4 are significant at 5% level.

The TSCAR is statistically significant at 1% level from event day until the end of the event period.

Our results though similar in effect to Ghosh et al. (1999), are different in magnitude which may be explainable by differences in analysis time periods and location settings. Results of Ghosh et. al are -0.416% on the event day and -0.630% on day +1.

Table 4: Stock Price Effects Surrounding the Announcement of A-REIT Seasoned Equity Issues

Event Day	TSAR	Z-Statistic	p-Value	TSCAR	Z-Statistic	p-Value
-15	-8.60361	-1.07284	0.28335	-8.60361	-1.06442	0.28714
-14	-2.27210	-0.28332	0.77693	-10.87571	-0.95143	0.34139
-13	4.99696	0.62310	0.53322	-5.87875	-0.41991	0.67455
-12	-18.03156	-2.24846	0.02455	-23.91031	-1.47907	0.13912
-11	-0.03135	-0.00391	0.99688	-23.94166	-1.32465	0.18529
-10	4.21209	0.52523	0.59942	-19.72957	-0.99649	0.31901
-9	-10.09501	-1.25881	0.20810	-29.82459	-1.39463	0.16313
-8	-4.00048	-0.49884	0.61789	-33.82507	-1.47954	0.13900
-7	-8.56443	-1.06795	0.28554	-42.38950	-1.74811	0.08044
-6	-3.20962	-0.40023	0.68899	-45.59912	-1.78398	0.07443
-5	-11.52366	-1.43695	0.15073	-57.12279	-2.13081	0.03310
-4	15.44473	1.92589	0.05412	-41.67806	-1.48850	0.13662
-3	-10.80590	-1.34745	0.17783	-52.48396	-1.80089	0.07172
-2	5.16495	0.64405	0.51954	-47.31901	-1.56460	0.11768
-1	7.97924	0.99498	0.31975	-39.33976	-1.25666	0.20888
0	-36.10126	-4.50168	0.00001	-75.44102	-2.33335	0.01963
1	-61.10880	-7.62002	0.00000	-136.54981	-4.09731	0.00004
2	-12.98997	-1.61980	0.10528	-149.53979	-4.36067	0.00001
3	-17.14586	-2.13802	0.03252	-166.68565	-4.73101	0.00000
4	-2.30470	-0.28739	0.77382	-168.99035	-4.67498	0.00000
5	-1.31633	-0.16414	0.86962	-170.30668	-4.59785	0.00000
6	19.66979	2.45274	0.01418	-150.63689	-3.97331	0.00007
7	-0.21429	-0.02672	0.97868	-150.85117	-3.89150	0.00010
8	-9.71117	-1.21094	0.22592	-160.56235	-4.05481	0.00005
9	-1.95361	-0.24361	0.80753	-162.51596	-4.02123	0.00006
10	-5.10829	-0.63698	0.52414	-167.62425	-4.06708	0.00005
11	0.40763	0.05083	0.95946	-167.21662	-3.98135	0.00007
12	-11.78729	-1.46983	0.14161	-179.00391	-4.18520	0.00003
13	1.28872	0.16070	0.87233	-177.71520	-4.08280	0.00004
14	-5.55416	-0.69258	0.48857	-183.26936	-4.13963	0.00003
15	-5.88000	-0.73321	0.46343	-189.14936	-4.20297	0.00003

This table presents the stock price effects surrounding seasoned equity announcements of over AU$10 million by A-REITs in the S&P ASX300 index over the sample period of 2000 to 2008. The event day (Day 0) is defined as the actual date of announcement by the A-REIT. TSAR is the total abnormal return of the cross-sectionally combined observations for the relevant event day. TSCAR is the total cumulative average abnormal return between day -15 and the relevant event day.

Cross-Sectional Regression Results

In Table 5, we investigate the cross-section of the market reaction to the announcement of the firm's intention to issue SEOs. The dependent variable in each of the models is the two-day CAR, as described earlier. The first and second models focus on the impact of the issued amount on abnormal returns. The base model (model 1) includes control variables for the firm's leverage, profitability, growth opportunities, tangibility, operating risk and size. Model 2 includes property sector, stapled management structure and international operations valuables, in addition to the base model variables.

Table 5: Regression Analysis of CAR

Variable	Model 1			Model 2		
	Coeff.	t-Statistic	Prob.	Coeff.	t-Statistic	Prob.
C	-0.020	-0.579	0.565	-0.065	-1.146	0.259
ERD	0.006	5.249	0.000	0.007	4.527	0.000
LTA	0.022	2.029	0.048	0.024	1.789	0.081
ROA	-0.070	-1.581	0.121	-0.124	-1.793	0.081
TOQ	-0.011	-1.644	0.107	-0.005	-0.346	0.731
PPT	-0.003	-0.699	0.488	-0.002	-0.315	0.754
SDE	0.025	0.747	0.459	0.046	0.914	0.366
SIZ	-0.002	-0.960	0.342	0.001	0.247	0.806
SRE				0.002	0.446	0.658
SOF				0.000	-0.048	0.962
SDD				0.004	0.411	0.683
SOT				0.007	1.363	0.181
SSS				0.004	1.085	0.284
INT				0.002	0.406	0.687
R-squared	0.370			0.381		

Notes: The dependent variable is the average cumulative abnormal return for day 0 and +1. The regressors are natural log of the issued ammount (ERD); leverage: the ratio of total liability to total assets (LTA); profitability: return on assets (ROA); growth opportunities: Tobin's Q (TOQ); tangibility: ratio of book value of property to total assets (PPT); operating risk: standard deviation of EBIT scaled by total assets for each firm over the entire period covered (SDE); size: natural logarithm of total assets (SIZ); and property sector dummy variables of 1 or 0 otherwise: retail (SRE), office (SOF), industrial (SDD); others (SOT); stapled structure management dummy varaible of 1 or 0 otherwise (SSS); and international operations dummy variable of 1 or 0 otherwise (INT).

In both models, the issued amount (ERD) and leverage (LTA) are positive and significant. Profitability (ROA), growth prospects (TOQ), and tangibility (PPT) are negative and insignificant. Operating risk (SDE) and size (SIZ) have anticipated signs but are also insignificant. Similar to Ghosh et al. (1999) we find structure and type of properties held by the A-REIT to be insignificant.

Conclusion and Future Directions

The paper examines the decision by Australian Real Estate Trusts (A-REITs) to issue seasoned equity offerings from 2000 - 2008 and stock market reaction to the offerings. The findings review that leverage and operating risk are negative significant determinants of seasoned equity offerings; profitability and growth opportunities are positive significant determinants. Of the structure and type of properties held by the A-REIT, only stapled management structure and international operations are significant determinants. Type of properties held by A-REITs show inconsistent results. Similar to previous studies of seasoned equity offerings, we find a significant negative abnormal return associated with their announcement and no evidence of excessive leakage of information. Cross-sectional regressions show that the issued amount raised and leverage are significant factors affecting abnormal returns.

These findings add to literature because no study has examined SEOs by A-REITs, with Australia being the second largest global REIT market.

Further research could be carried out to examine A-REIT SEOs under different economic conditions. This could involve the period before the advent of the global financial crisis from 2000 – 2006 and when its effects are being fully felt after 2007.

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